The Builder.

SATURDAY, DECEMBER 30, 1854.

WE close our twelfth volume to-day, and give an Index and Title-page to bind with it, as usual.* Recent regulations, respecting the transmission of newspapers by post, have prevented the enlargement of the sheet as on some former occasions; but we have curtailed the advertisements to meet the encroachment to some extent. The Chancellor of the Exchequer has given notice that early in the present session he intends to review the whole question; and we anticipate that we shall then be enabled to issue an enlarged sheet occasionally, as heretofore. If not, we shall arrange to give additional matter at times in some other shape.

Possessing, as we believe our journal does, the good esteem of the public, promises for the future are, it may be hoped, unnecessary. We will simply say that we have various important illustrations in progress, and shall avail ourselves of any means that may offer themselves to increase the efficiency of the *Builder*, and extend its usefulness.

Occupied as most minds are by the frightful war into which we have been forced by the guilty ambition of Russia, it is, nevertheless, to be hoped that the questions affecting our social condition and progress yet unsettled will obtain the consideration their vital importance demands; that the respective duties and rights of capital and labour may be arrived at and made known; and that the fine arts, though *par éminence* the arts of peace, may continue to receive that cultivation which was being afforded to them.

To the obscure and the striving, fitted for the race, we would offer words of encouragement and hope. Although we have no great faith in the power that does not *make* itself felt, and force its own way in one direction or another, still many have died unknown, with energies paralysed and a quenched heart, who, had they but found the first opening and a stirring word, had entered worthily on the stage of life, and been recognised as leaders and benefactors. Quite true it is that,—

> "Art is long, but time is fleeting;
> And our hearts, though stout and brave,
> Still, like muffled drums, are beating
> Funeral marches to the grave."

The chief obstacle to the progress of those whose genius inclined to the arts, has heretofore been the want, if unaided by fortune, of the means of obtaining that proper elementary instruction,—that power of expression, so to speak, which would enable them to realize their conceptions, and give their natural powers proper development. This want is being supplied to a certain extent by the elementary schools of the Department of Art and some popular institutions, and we may expect in due time, if the course be persevered in and extended, to see valuable results. For their full development an appreciating public is necessary; and, with a view to this end, it is most desirable to lead to a love and knowledge of art those who may not yet have started on that road, and to open the eyes of the worker to an appreciation of the beautiful,—thus, too, giving him a new sense, and rendering what he before viewed with indifference the cause of pleasurable and elevating emotions. If they were *only* pleasurable it would be something. The stream of life will not flow with less usefulness if its banks be strewn with flowers. We have a strong notion that if you make men happy, you help to make them good. "Materialism," says an American journalist,—"the passion for money-making and excitement, is eating up the heart of our people. We are not a happy people: our families are not happy. Men look haggard, and anxious, and weary. We want something more genial, and social, and unselfish amongst us,—a piety which prompts to petty self-sacrifices, and takes a pleasure in them, as well as in great. Any family-festivals — anything which will make home pleasanter — which will bind children together, and make them conscious of a distinct family-life — is most strongly needed. Good people are to recognise that there is a religion in Christmas feasts as well as in prayer-meetings; that a father who has made his home gloomy, has done quite as great a wrong to his children, perhaps, as he who made it irreligious."

We have devoted some space in the present and previous volume to an exposition of the miserable dens in which thousands of our countrymen and country-women are condemned to exist in this metropolis,—dens, where cleanliness is impossible, and health and morals are alike speedily degraded; and we have sought to evoke, in their aid, not merely

> "The pure high-soul'd unselfishness,"

which happily is not rare amongst us, but the commercial spirit which is ready at all times to undertake whatever is likely to afford a good return for money invested. The statements we made were justified in the most remarkable manner during the fearful outbreak of cholera that followed months after their publication,—justified, indeed, to such an extent, that they may be almost regarded in the light of fulfilled prophecies.* Some good, we have reason to believe, was effected by their publication; but had the warning been more fully attended to, hundreds of lives might have been saved, and an enormous amount of misery prevented. It is not because the cholera has left us for a time that the efforts to improve the sanitary condition of towns should be relaxed: other preventable diseases, attendants on bad drainage, vitiated air, and want of water,—diseases which hover over cesspools and come out from the overfilled churchyards,—still carry off their thousands, and lessen the powers, physical, mental, and pecuniary, of those who remain. Take the one startling fact shown by published tables, and quoted by Mr. Hopley, that in the five years, 1833, 4, 5, 6, and 7, half the men who offered themselves as recruits in Dublin, Edinburgh, and London were rejected, as incapable of bearing arms;—a fact showing that, by carrying out efficient measures of sanitary reform, and by leading to the knowledge and observance of the laws of health, the power of the empire might be enormously increased, without adding a man to the population. It is asserted by one who has the best means of knowing, that more than one-fourth part of the next generation of the English race will be born and bred in insalubrious places, which must, in the long run, induce degeneracy. Attention, however, is, we hope, being awakened to the vital importance of the matter, although too slowly, and the Future may regard as a blessing the Pestilence which has been a curse to the Present.

This subject will still receive at our hands the consideration it demands, together with those structural improvements and legislative enactments which bear upon it. The advancement of architecture as a fine art amongst us, now, perhaps, at a turning point, and the maintenance of the dignity of the profession; the interests of the building trades throughout the kingdom,—a body second to no other in importance; the spread of a knowledge of art amongst all classes of the public; the assurance of a good understanding between masters and men; and the inculcation of kindly feelings everywhere—are matters which constantly occupy our thoughts and will command our most earnest endeavours.

THE CRYSTAL PALACE AND THE HISTORY OF ARCHITECTURE.

ONE OF THE STYLES NOT ILLUSTRATED AT SYDENHAM.

IF all means be used for promoting the advancement of art now,—some examination—such as we have endeavoured to indicate in our notices of the "Courts" at the Crystal Palace—should be made of the circumstances which have led up to the present state of architecture. The investigation into characteristics of *examples* should be of a more comprehensive—but more searching—description than what has hitherto been attempted. The requirements of popular education, which have mainly been considered in works on the general history, are certainly not now to be disregarded. But it is necessary that our facilities for the apprehension of facts, should be such as to enable us to enter into the philosophy of questions, which must be raised in the mind of him who looks at the variety of opposite features in former works, with reference to the art of his own time. We are gathering much fruit together: we have yet to express the juice.

We should arrive at the ability to tell why, for instance, a certain revulsion of taste occurs from time to time in particular countries,—where the national bias oscillates between exceeding deference to rule and precedent, and the indulgence—in the pursuit of the necessary element of novelty—of *caprices*, such as a wholesome regard for precedent would have prevented. Rightly viewing these conditions, and, further, apprehending the fact that other countries defer such natural tendency in their own case, and meanwhile receive impressions from the changes elsewhere, and we shall be gradually arriving at knowledge, such as might one day give those means of direct influence upon art in our own country, which few of us now exercise, partly because we are not able to discern in what direction we should put forth efforts. Conditions of climate, and the resources of countries; national peculiarities, and political and social history should be looked to,—no less than the monuments themselves,—if we would discover why the genius of architecture has become fashioned and moulded into styles, or those minor inflexions which are to be seen in each district, or collection of edifices.

How much more numerous are the materials than what are found, or even suggested, at the Crystal Palace, the fine collection of Indian drawings, lately exhibited at the Institute of British Architects, would help to show,—particularly, bearing in mind that these are but inadequate illustrations of a mere spot of ground—on a vast continent, inhabited by many different races,—each leaving its own sculptured story. With these chapters of the chronicles of architecture we have not now to do, but we have to try to give some idea of what the history of art presents, during a period later than that of the style in Italy with which we last concerned ourselves. The series at Sydenham winds up with the fourth act of the drama, and leaves us to present the rest of the *spectacle* without the properties, with what skill we may.

The "Handbook to the Italian Court," indeed, does not quite pass over the *dénouement;* but the collection has nothing more than one or two good examples of piers panelled and decorated with ornaments in the *Louis Quatorze* style, from a votive offering erected in the cathedral of Notre Dame at Paris, by Louis XIV. in fulfilment of a vow of Louis XIII.

What then we have to make, or rather to suggest, is the examination into the characteristics of architecture during a period, the traces of which are marked in our own day. With many illustrations of particular works of art at hand, there are few attempts to which we can refer, at exposition of the characteristics of styles during the seventeenth and eighteenth centuries,

* A title-page in colours may be obtained, on personal application, at the Office, 1, York-street, by those subscribers who prefer it.

* The *Morning Advertiser*, in a valuable leading article on the 20th inst. pointed out one of the extraordinary coincidences to which we are referring.

and of the relative influence of the different countries of Europe. It is beyond our opportunity to supply every omission. Perhaps, too, there is some ground for believing, that here we may apply the assertions as to the difficulty of getting to conclusions, where events are, as we may say, within too proximate a field of history.

Throughout the whole annals of European art, we may constantly remark the marvellous influence of Italy. When we spoke of the wave of progress, long undulating through distant channels—after the original element had changed, or been supplanted—we might have tracked each stream to one gushing source. Like the gift of her own *improvisatori*, the manifestation of art in Italy is of a nature peculiar to one soil alone.

The conclusion of the sixteenth century found the Italian architects somewhat afflicted with the trammels of rule and measure, and deficient in the compensating powers of design which we discovered in the works of the great artists who had gone before. Substituting one style for another, the circumstances were much the same as what we have recollection of in England, when every architect's work was traced from the same plate of Stuart's "Athens." Sooner or later, the true artist becomes dissatisfied with such absence of art, and then the architecture of a country passes through a crisis. In Italy, this was reached about forty years after the commencement of the seventeenth century, when the practice of Borromini and his fellows, effected a total change from the architecture of the Cinque-cento, though preserving most of its details.

The influence of the Italian art upon France and England during that period, was in some respects different. In France, as in the time of Serlio, the Italian artists were held in high esteem; and always, every fashion which happened to be prevalent in Italy, appears to have found its way directly to the other country, though without supplanting the style previously in vogue, or interfering with the constant deference of the best French artists to the precepts of the Italians of the earlier period. Bernini, the greatest of the men of that time, an artist of marvellous dexterity in all branches of art, and one not wholly afflicted with the unfortunate tendencies of his *compatriotes*, was induced to visit the French capital, where he was received with great distinction.

From all causes, we discover in France a number of concurrent styles, such as did not, till long after, prevail in England. This country received the Italian impressions, by the visits of Inigo Jones to Italy, and through a French medium. At the date 1600, before referred to, the Italian architecture had not come into use. Jones practised in the style so well known as that of James I. After his visit to Italy, he assumed an entirely different manner, and this, under Palladian precept, he appears to have retained up to his death, which took place in 1651. Though he was acquainted with the contemporary Italians and their works, he remained uninfluenced by them, as did the chief of his successors,—though the style of Wren was much influenced by that prevalent in France.

The style of the first half of the seventeenth century in Italy, may be said to have been formed on the principle of *disregarding* the structural element which had been one characteristic of the Cinque-cento. Columns in groups, or at irregular distances, broken entablatures, too frequently repeated (for the sake of repetition of profiles), curvilinear fronts, and "such scenery as belongs to painting," as Professor Cockerell has said, "established the novelty of picturesque architecture—a contradiction in terms,—unless by combinations from certain points of view, as in the works of Vanbrugh." If the reader will look from the river steamer, at the houses which form the south end of Salisbury-street, some impregnation of the false taste which is referred to, may be there detected. In the doorways of ordinary houses of the last century, the same degenerate Italian element will be found. The lines of pediments are broken, or they are even curved in the plan; and the horizontal members of the cornice may be omitted. The inclined sides, moreover, took every variety of shape. In old pieces of furniture,—where, however, some departure from the ordinary principles applicable to masonry, may be tolerable, or even commendable,—we find many evidences of the impurity which existed at the source. Sometimes the pediment was broken, so as to give space for a bust. In one of the plates of Sir Wm. Chambers's Treatise, are several of such forms as, he says, should be avoided. Amongst the number is one where the window, or doorway is crowned by two halves of a pediment, so joined as to form the shape of the letter V. In short, we come to a time when it was a principle, that everything should be distorted and contradictory.

Of this, the forms of vases are good illustrations. In the vase, capacity—expressed by predominating convexity of the exterior—is the essential characteristic. The antique vase had been much employed by the architects of the Cinque-cento period. The later Italians took the vase, and for the convex substituted the concave line; and further, twisted and gashed the surface, till the original idea of purpose was destroyed; and this was done without securing a beautiful form applicable as a termination, whilst free from the æsthetic objections which some have perceived to the use of vases on buildings. It cannot, we fear, be maintained that Wren even was free from this kind of fault.

Still, looking at the best works of the English architects, the style might be supposed to have scarcely penetrated to England. But the evidences of its prevalence are to be found in every old street throughout the kingdom. In this case, what has been discovered in other periods, with reference to the existence of a distinct character of art, subordinate to, or caricaturing the grand style, is perhaps equally to be asserted in regard to our own country. Evidences might be found in one or other of the books—now scarcely seen, but occasionally on book-stalls—by the erudite "architect and carpenter,"—treatises on the five orders of architecture, and the whole manner of building—books professing to teach all that can be known, with extraordinary speed and accuracy. Occasionally, a Batty Langley will create a diversion; but the degenerate Italian taste appears to form with these books the groundwork of the art; though ill-drawn plates of the orders of Palladio and Scamozzi may be not wanting. How easy would it seem to fall into a partial view of the style of a country, were the attention confined to only one class of buildings? And let it be observed, that whilst the Italian example, in one form or another, was general in towns, the traditionary influence of the Gothic style was still operative in domestic architecture—as in the recesses of the county of Kent. The unwritten history of the domestic architecture of this period, would furnish an interesting chapter of its own.

From what we have written, we have perhaps made it clear without illustrations, what was the principle—or if our readers like—the subversion of principle,—of the style which followed soon after that of Palladio and Scamozzi, to which we brought down our historic record. But it was not till the middle of the seventeenth century, or we may say till the beginning of the eighteenth, that the full result of the innovations, originally commenced by Michelangelo, was reached.

Before such time, the extraordinary executive skill of Bernini and others, seems to have seduced the artist himself, into giving forth what would hardly wait the slow progress of deduction and causation. For, the exercise of the reason, no less than the exercise of dexterity, should be constant with the artist. Without the union,—for *art*, is substituted imitation,—such as can have no permanent hold on the higher order of mind in the observer. In architecture, however, Bernini did not fall into all the vices which were current with his contemporary Borromini. The last-named architect went so far in his pursuit of novelty, as to place the capitals of columns where the bases should be. In such manner were the true principles of design, which involve the constant recognition of structural office, by the later Italians misunderstood or disregarded.

In manufactures, little had been effected in the strictly Cinque-cento. The style seems to have been felt deficient in the requisite pliability. A resumption of the Renaissance style had therefore taken place.

In France, the manner of Lescot and Philibert de l'Orme had been founded upon the architecture of Venice,—the style which had been originally introduced into France by Serlio. From all causes, the architecture of the early part of the seventeenth century, as we said, is difficult to characterize. We refer to the reign of Louis XIII. (1610 to 1643). The authors of the "Handbook" say "a rather 'Rococo' style" was in vogue, as seen by the church of St. Etienne du Mont and the chateau of St. Germain en Laye, but that the works of De Brosse were exceptions,—his Luxembourg Palace being somewhat in the style of the Florentine structures. Mr. Wornum says, as regards ornamental art, that it had a vague character, of which the various nautilus-shells are examples,—exhibiting something of Renaissance, Elizabethan, and Louis Quatorze mixed up together. In the domestic architecture,—as illustrated, amongst other subjects, in the magnificent government work, "Statistique Monumentale de Paris" (a work worthy of being imitated in our own capital), edited by M. Albert Lenoir,—the strictly Renaissance style, and a defined, though sometimes ill-proportioned Cinque-cento, are found, combined with the high-pitched roof, during much about the same period. Dormer windows were commonly used, and turrets similar to those with which we are so familiar in Scotland—to which country the form was no doubt taken—are found at the angles of buildings, and are finished with pyramidal and ogee cappings. We have here the materials which gradually settled into the best known form of French domestic architecture; which, ultimately, combined with the pavilion and Mansart roofs, reached this country, and modified the form of many of the London houses, and was fully exemplified in Montague House,—the old British Museum.

Whilst this distinctive style was beginning to take form in France, additional elements were being introduced in Italy, from which a new and marked system was ultimately to be contributed to the resources of the French artists. This was the style ultimately called the Louis Quatorze. There is little difficulty in tracing its rising in Italy, through the ordinary degenerate Italian. The segmental pediment broken and voluted, of which we discovered an indication in the time of Michelangelo, was an early indication.

The first defined example of the style is found in the Chiesa del Jesu, at Rome, which was decorated by Father Pozzi and others. The date may be 1640 to 1643. Pozzi's work on "Perspective" has a frontispiece which would supply us with the best illustration we could give of the debased architecture of which the Louis Quatorze was the natural termination. It must, however, be borne in mind, that this style also exists as a collateral, though defined system of design. The Louis Quatorze architecture is devoted to *interiors*, and during its most flourishing period in France, it did not prevent the erection of one of the finest monuments of the Cinque-cento style to be found in Europe.

THE PRESENT CONDITION OF THE PROFESSION OF ARCHITECTURE.

A PHILOSOPHICAL history of architecture has yet to be written. True, we have many sketches of the various styles, many tracings of their historical succession. But setting it down as an axiom that the first law of the art is, or ought to be, that of regular and constant progression, why our edifices should be designed after models the aims of which were the fulfilment of conditions presented by very dissimilar and past civilizations, and the satisfaction of necessities caused by differences of climate, of manners, of customs, and ideas,—in many instances, the antipodes of our own,—has always been considered by us an anomaly calling for especial explanation. And it is the more surprising, when we reflect that the present time is the only time in the world's history which exhibits so glaring an anachronism. The student, after taking a view

of what has been done, may perhaps be pardoned for asking whether we are advancing upon it. The answer simply is, that, while nearly every great nation of antiquity, and a grand institution, which flourished in its greatest splendour during the Middle Ages, devised and carried out systems of decorative architecture, peculiarly suited to the purposes for which they were required, and rising directly out of them, we, in these days, when the world has attained a higher degree of civilization than it ever before arrived at, possess so little vigour of intellect, and such slight inventive powers, as to be able to do little better than tamely copy, and that oftentimes without feeling and effect, without an imbibition of their spirit, the works of those whom, in so many other respects, we have long since far excelled. As the ancient Egyptians, the Greeks, and the Romans, the architects of the Middle Ages and of Italy, designed, so do those of the present day reproduce their structures. Certainly they are not quite indiscriminately copied,—a principle of selection prevails,—but imitation it still is, and original thought has scarcely an existence. It would actually appear as if design were exhausted. Ages ago it was perceived that "Tempora mutantur, nos et mutamur in illis;" but architecture now bids fair to continue ever the same. Instead of progressing we retrace our steps, and in this, its manhood, we go back into the youth of the world; and the result is, what has been termed "the reproduction of a galvanized corpse." Edifices are no longer in any country what they formerly were in every country, indigenous, national, and characteristic of the spirit of the age to which they owe their existence.

We are aware some may tell us that the various styles of architecture are so beautiful and so appropriate to many purposes, that it is impossible for us to advance upon them, and we may well rest content with their successful reproduction. To such wretched induction, we would reply in the words of a great and prescient author, Francis, Lord Bacon. Substituting only the word architecture for "the sciences," his remarks have wonderful force and applicability. "Let no one affirm that the sciences, increasing by degrees, have at length come to a certain full stature, and have at last, as having finished the course allotted to them, fixed themselves in the works of some few authors, so that now nothing better can be found out, and it only remains that what has been invented should be cultivated and adorned. It were to be wished, indeed, that such were the case; but the more correct and the truer account is, that this enslaved condition of the sciences is nought else than a thing bred from the audacity of a few, and the sloth and pusillanimity of the rest of mankind. For as soon as any particular science has in parts been somewhat diligently tilled and laboured, some one has usually arisen, confident in his talent, and accepted and celebrated on account of the compendiousness of his method, who, in so far as regards appearances, has established the art but in reality has corrupted the labour of his predecessors. Yet what he has done is wont to be well pleasing to succeeding generations on account of the easy utility of his work, and their wearisomeness and impatience of renewed inquiry. And if any one be moved by the inveterate agreement of opinions, as if it were the verdict of time, let him know that he leans upon a very weak and fallacious consideration."*

What can be the cause of the state of degeneracy which has been described? We believe it wholly arises from the true aim of the art being entirely overlooked; and it may be permitted here to pause, and endeavour to clear our ideas, and arrive at a definite understanding as to the nature of those principles,—formerly so attentively kept in view—now so neglected and disregarded.

Architecture, it is submitted, has two aims, or rather there are two principles† involved in its practice. The first is utility, the second, the production of a certain effect on the mind. The noblest and most perfect efforts of the architects owe their success to a happy satisfaction of these requirements. It is the necessary result of them, that an unmistakeable and peculiar devotion to its object should be the most evident characteristic of an edifice. *Fitness*, and the *appearance of fitness*, are the great points to be attended to. We see this strikingly exemplified in many of the ancient structures. Judging of the effects produced by them, *per se*, they not merely answer their purposes, but appear to rise out of those purposes. The essence of architecture, if it may be so phrased, is *realism*. A fabric is required for a certain intention. And it may be made to appear, or not to appear, devoted to its destined use, may seem a structure of the present day, or of ages long past, and yet, independently of all appearances, serve its end. Now the skill of the architect is shown in avoiding such an anomaly. And to do this is no easy task. Sir William Chambers tells us,—"The most certain test of merit in an edifice is where every part has some meaning, or can furnish an adequate reason for its existence, and will not only bear scrutiny with respect to its individual merits, but as it stands in relation to the whole."* The total want of truthful meaning in most modern structures is their obvious defect. The difficulty of combining decoration with utility, so that the one shall appear to rise out of the other and further the end proposed, is evidenced every day, not merely in architecture, but in articles of domestic use, in which, when ornamentation is introduced, the great aim seems to deceive. Direct copies from nature; objects represented with a total disregard to relative proportion; attempts to give flat surfaces the appearance of projecting in moulded and decorative forms; shadows where none could possibly be thrown; imitations on one material of another more expensive; and horses, dogs, ballet-girls, houses, and trees, floundering about without the slightest connection with other objects, are but a few of the incongruities we could name, and which the museum of the School of Design amply illustrates.

Although the evil of our present anomalous position has arisen from too exclusive an admiration of the structures of other nations and past ages, we are very far from being of those who would discourage their careful examination by the architectural student. Of the immense value of such a study, of its being rightly directed, one of the surest aids to successful progress, not the shadow of a doubt can be entertained. "Nescire quid antea quam natus sis accideret, id est semper esse puer." And we may surely be permitted to derive instruction from the experience of others. But the study of the edifices of olden days has been uniformly perverted from its right aim,—that of progression. It has necessarily tempted modern architects to go back instead of forwards; to transcribe simply what those ancient men did, instead of moulding their tangible thoughts into the requirements of our civilization.

In just the same manner that a course of classic literature is an aid to original composition, so, an examination of fragments of antiquity should lead, not to a tame copying of them, but to an evolution of new forms. To invent, to create a novelty, it is necessary to know what has been done before; and such knowledge is the surest aid to successful progress. If we wish to comprehend the present time, it is absolutely essential first to examine into that which is past. "Ex nihilo nihil fit." Invention is commonly the consequence of understanding what has been previously accomplished, and advancing upon it. What is the profound observation of Lord Bacon in the first book of his "Advancement of Learning?" "Antiquity deserveth that reverence that men should make a stand thereupon, and discover what is the best way; but when the discovery is well taken, then to make progression."

Therefore, we would say, still study, still delineate the models of other days. But do more than simply this,—and go beneath the exterior surface. Consider the principle involved, the frame of mind of the designer, the object to be attained, and the feeling expressed. What has been done is the foundation on which to erect the future superstructure. "The man who follows another," said Michelangelo, "always is behind; but he who boldly strikes into a different path may climb as high as his competitor." The road to originality begins in the old paths. He who would tread the new, must gain while in the old a more capacious, comprehensive spirit; an appreciation of that which is now required from the observation of what was then essential; and a loftier ambition, which neither will nor can content itself with moving perpetually round in the same weary contracted circle.

That little progress is to be anticipated if the old materials at hand are neglected and set on one side, the reader will doubtless allow. But we go much further; for we are certainly of opinion that a skilful combination and merging together of the details of the styles now existing, and a melting of these down into a fitness for modern purposes is easier far than the creation of an entirely new system, owing nothing to any which preceded it.

That such endeavours have not hitherto been highly successful is the last and weakest reason for the inference that the effort must always fail. Has it ever been seriously and perseveringly attempted? Approaches, most clearly indicating the possibility of success, are everywhere abundant. Is there nothing of the horizontal principle opposed to the vertical in the long parallel lines of the river front of the New Houses of Parliament? The whole edifice is, in fact, Gothic architecture, Italianized in the mass. Show an architect, ignorant of the structure, a block plan, omitting, of course, the buttresses, &c. and he would instantly conclude from its uniformity that the elevations were in classical architecture. The style termed Elizabethan is, unmistakably, an effort to combine two distinct and opposite principles. We perceive the same attempt in the melée of Classic, Romanesque, Gothic, and Arabian forms at Venice. One of the greatest proofs of the skill of the mediæval architects is the manner in which the different periods of their art are blended together with, considering the difficulties of the task, comparatively little appearance of patchwork and confusion; one style rising progressively out of the preceding one. The principles of Norman architecture are diametrically opposed to those of Perpendicular Gothic; yet we see in the same structure, Norman, Early Pointed, Decorated, and Perpendicular melting into one another, and plainly telling us a master-mind only is requisite to make the most opposite qualities agree. There is a church at Paris, that dedicated to St. Eustache, in which a still further effort is made. Forms derived from Gothic, nay, the very tracery of the windows, are moulded into Italian details, and the *coup d'œil* is striking in the extreme. The same remarks may be made of the church of Santa Zaccaria, at Venice, and of many others. Sir Christopher Wren may be quoted as countenancing by his practice the theory we are advocating; for whence are derived his lofty and often elegant Italian steeples but from an appreciation of the beauty of Gothic spires? Many more examples might be cited to show that our proposition is not wholly visionary; but we deem it hardly needful to do so. We have thought long and much on the subject, but have utterly failed to discover a single argument countenancing the idea that design is now exhausted, and a new style an Arcadian dream. It has been seen that many systems have been directly derived from those which preceded them, and it is therefore indisputable that another may yet arise on the bases of ancient methods now so closely and so tamely copied. What we propose is, not to confine ourselves to one of these, but, by making use of all, produce a style embracing within itself the beauties and advantages of the others.

It is a system of eclecticism we advocate. Once it was applied to painting, and the noble school of the Carracci was the result. So late as the sixteenth century, Agostino Carracci thus illustrated the idea of his brother Ludovico, of selecting the more prominent characteristics of the various great masters, and combining them together:—

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* Prolegomena to the Instauratio Magna.

† Thus ably defined by Payne Knight:—"Principles in art are no other than the train of ideas which arise in the mind of the artist, out of a just and adequate consideration of all those local, temporary, or accidental circumstances upon which their propriety or impropriety, their congruity or incongruity, wholly depend."

* Civil Architecture.

"Chi farsi un buon pittor brama e desia,
Il disegno di Roma abbia alla mano,
La mossa coll' ombrar Veneziano,
E il degno colorir di Lombardia.
Di Michelangiol la terribil via;
Il vero natural di Tiziano;
Di Corregio lo stil puro e sovrano,
E di un Raffael la vera simmetria.
Del Tibaldi il decoro e il fondamento,
Del dotto Primaticcio l'inventare,
E un po di grazia del Parmigianino:
Ma senza tanti studi e santo stento,
Si ponga solo l'opre ad imitare
Che qui lasciocci il nostro Niccolino."*

Whether this is really feasible as applied to painting is another question. It was, however, believed in by the Carracci, and many great painters were produced under their mode of study. So in architecture, something may be gleaned from all the styles: the beauties which exist in one are vainly sought for in another. From Egypt, massy sublimity may be learnt; from Greece, lofty conception, purity of form, and chastened elegance; from Rome, splendour and magnificence; from the Moors, airy grace, the combination of geometric forms and harmonious colouring; and from Gothic architecture, impressiveness, and the perfection of symbolism.† Edward L. Tarbuck.

ON LINEAL MEASURES.

As most of the readers of the *Builder* have to use, professionally, measures of length, such as chains, tapes, rods, rules, and scales, it may be useful to offer a few remarks upon the errors to which these measures are liable, and to show the necessity there is for having a proper standard by which to test them from time to time.

In 1841, I submitted some facts upon this subject, and my evidence is printed as follows in a blue-book of that date:—

"Knowing the negligence of surveyors in checking their chains, I borrowed one that had been tried about a year before in my office, and which had been used for that period in the service of a civil engineer. Upon trying it with my standard, I found it 13 inches too long. The person who had used it, said he knew twenty other chains then in use that must be just as bad. The effect of this error would be this: if I possess a square mile of land, or 640 acres, this surveyor, with the chain in question, would report the contents to be 619¼ acres, so that in selling my land at, say only 30*l.* an acre, I should lose 615*l.*

In the colonies this evil is very serious; for in setting out county and parish lines by chains of different lengths, the discordance and confusion among the details is endless, and will at some time cause dissatisfaction. In 1820, the Solicitor-General to a colony, and the agent of a nobleman who had possessions there, informed me that the discrepancies in the admeasurements were enormous.

The chain to which I have alluded was one of the best kind, as far as could be judged by the eye. The error was chiefly caused by the stretching of the wire itself, not one of the links or rings having opened: there was nothing in its appearance to indicate that it was incorrect, except that it was a little worn; and the surveyor would have continued to use it in that state as long as it would have held together. He had never been instructed that during a survey a chain should be frequently checked and adjusted by a standard.

Strange as this may appear, I believe it to be a common case. Surveyors in general have no proper standards by which to check their chains and measures; and as regards actual practice, it will be found that most measures can be traced to no better authority than to carpenters' rules, no two of which agree."

But, now let me show what dependence is to be placed on a carpenter's rule. I have just applied to a foreman of carpenters, and requested him to produce his rule. He immediately began to extol his measure, by saying that it was one of the best make, tipped with steel, and was the one he used for all his work; and the argument he mainly insisted upon to prove its accuracy was, that he had used it for years. I saw that to seem to doubt his rule, was a sorer and more personal matter than I supposed. Now, I said, if I were to ask you to make me a ten-feet rod, how would you proceed? He said he should set off the dimensions from his rule with a knife, and was sure the rod would be true. Very well, I replied: now do me the favour to set off five feet on my table as accurately as you can by your rule, and make the knife-marks all plainly on the table. When done, I gave him a correct five-feet rod, and his chagrin was great, when he found that his five-feet set-off was full one-tenth inch too short as compared with true standard measure.

A surveyor, too, having got into some serious disputes about the dimensions of iron-work, brought his two-feet pocket-rule to me, to try it by my standard, so as to back up his statements by being able to declare that his rule was correct. He should have thought of this before. He found it was just one-twentieth inch too short, though it was a best ivory rule, bearing the name of a celebrated maker, and cost a guinea.

Hence, if I were to employ either this surveyor or foreman to purchase 100 feet frontage of ground, and to erect a building upon it, I should have some inches less in frontage than I pay for, while the whole measure and value of the building would be in excess; and it was only last week I had an opportunity of seeing that one-eighth inch had to be filed off each end of an iron casting, in consequence of an error of one-fourth inch, occasioned by discrepancies among rules that had been employed. In this country we have no legal standard measure of length, the legal standard yard having been burnt when the Houses of Parliament were destroyed by fire, in 1834; and, though twenty years have elapsed, the Standard Commissioners have not yet, I believe, laid the result of their labours before Parliament.

Practically, the only standard lineal measures that exist, are the dividing-engines and brass-cutting-patterns of the principal mathematical instrument-makers. But these are of metal; and unless the metal is at the agreed standard temperature of 62° Fahrenheit, the dimensions they give are not correct, unless in transferring their divisions to metal of the same kind at the same temperature.

Hence all measures of ivory or wood will be found a visible quantity too long or too short, unless they happened to be cut at the standard temperature, and are compared with brass scales at that temperature. It seems only reasonable that all who profess to measure lands, buildings, or work of any kind, should be bound by law to have a correct standard by which to check their measures, and be liable to penalties if found incorrect. There appears no reason why lineal measures should not be under the surveillance of law as well as measures of bulk and weight. But now comes the question, as to the best kind of standard measure that should be adopted for general use, and that really is, upon the whole, best adapted for common practical purposes, and such as the law might safely patronize, if not enforce.

If you were to apply to any principal mathematical instrument-maker for a standard yard scale, he would probably recommend a brass scale graduated on the edge, and strengthened and held down flat by an edge-bar, about an inch deep, fixed along the middle. The price would be about eight guineas.

But I am prepared to prove that such a scale as that described is not fit for the purposes in question, while the kind which I proposed to the Commissioners sixteen years ago, at the price of only one-fourth of brass scales, answers perfectly, as time now enables me to prove. What I then submitted as my opinion, I am now entitled to affirm as a fact. The annexed diagram, to about a one-third scale, shows one end of the standard I propose. The bottom-piece, or scale, is about 41 inches long, 3 inches broad, and ¼ inch thick, with an edge-bar 1¼ inch deep. The material is straight-grained yellow pine, as full of turpentine as can be selected; and it is essential that the edge-bar shall be cut from the side of the same piece as the bottom or scale. The edge-bar is attached by six strong brass screws from under the bottom-piece. On one side of the scale there are four brass return-plates, and on the other side are two similar plates, all let in flush with the wood, and securely screwed with brass screws; the four on one side being for 3 feet, and the two on the other for a length of 5 links of the land-chain. When finished, varnished, and suffered to stand by for a few weeks, the feet and links are struck off from the dividing-engine, taking an opportunity, when the temperature of the air is 62°, so as as to get upon the wooden scale the true legal measure. A small plate of ivory or brass should be screwed on each side of the edge-bar, one stating that the measure is feet, the other links, with the temperature noted. Such a standard as this is strong, not liable to be put out of order, and is adapted for the office or workshop, for testing the various measures employed.

But now come a host of objections. Some will say that the measure will shrink with the heat and swell with the damp, and all the instrument-makers will declare, of course, that there is nothing like brass.

All such objections I deny. I have had three of these measures in use seventeen years, and I have tried them with the best standards, under all changes of weather, and they never vary. I have never been able to detect any change in the whole length of the five links that could be seen by a magnifyer that enables me to read a vernier to $\frac{1}{1000}$ inch; and if no error can be seen with such a glass, in a length of more than 3 feet, I call that perfection. I know that even such a quantity as $\frac{1}{10000}$ inch can be seen under a microscope, and measured by a micrometer; but when that quantity is at the end of 3 feet, it is quite another question. I have asked experienced instrument-makers whether they would venture to swear that one 3 feet scale is $\frac{1}{10000}$ inch longer than another, and they smile, and shrug, and say they would not. Hence, for all practical purposes, it may be assumed that the wooden standard never varies; and I therefore urge that it is better for common purposes than brass, which is ever changing, and requires corrections to be applied, by means of a thermometer, before a true length can be ascertained, allowing ·0000105 for every degree above or below 62° Fahrenheit.

It is curious to see how rapidly a 3 feet brass scale will expand. A scale of this length, if placed under micrometer microscopes, and one end be held down by a warmed weight, the division at the other end will be seen to creep along like a thing alive. Not so the wooden measure, which remains true, in spite of heat, cold, or moisture. It is of no use to discuss about the effects of hygrometric action upon wood full of turpentine, when no such effect can be seen by a good magnifier; while we hardly dare to breathe on a brass scale, if we wish to be very exact in our dimensions.

Thus many learned persons appear to be straining at gnats and swallowing camels, while landed proprietors are losing their acres, and people are everywhere unwittingly cheating one another and themselves, for want of a cheap and accurate unit of measure for the government of work.

Though it is of no advantage to me whatever, either directly or indirectly, I would mention that a great many of these wooden measures have been made by Messrs. Troughton and Simms. H. B. S.

TOMB OF THE THREE MARTYRS, IN THE CHURCH OF SENS, PICARDY.

This peculiar and beautiful tomb, remarkable for its picturesque arrangement, is of the Norman Transition period. We have given this example of the architecture of Picardy as it is useful to study the feeling which has guided the artists of different countries and to select from the best qualities of each. B.

The Beauchamp Almshouse Fund.—The late Earl of Beauchamp bequeathed 60,000*l.* for the erection and endowment of almshouses at Newland, in Worcestershire, for the benefit of infirm agricultural labourers. Nearly two years having elapsed since the decease of the late earl, the poor of that county are anxiously expecting the fulfilment of the testator's intentions, the land having been granted for this purpose a twelvemonth ago by a deed of conveyance enrolled in the Court of Chancery.

* Thus translated by Mr. Wornum:—"He who wishes to be a good painter, let him acquire the design of Rome, Venetian shade and action, and the dignified colouring of Lombardy; the terrible manner of Michelangelo, the natural truth of Titian, the sovereign purity of Corregio's style, and the symmetry of a Raffaelle; the decorum and fundamental knowledge of Tibaldi, the invention of the learned Primaticcio, and a little of Parmigiano's grace; but without so much toil and study, he need only imitate the works which our Niccolino has left us here."

† To be continued.

TOMB OF THE THREE MARTYRS, PICARDY.

ANNUAL GENERAL MEETING OF INSTITUTION OF CIVIL ENGINEERS.

On the 19th instant, Mr. James Simpson, president, in the chair, the annual report of the retiring council was read. In the course of it, the leading events of the political world, and particularly the occurrence of war, were alluded to, as having tended to arrest the progress of civil engineering works, whilst, on the other hand, the mechanical engineers had found ample employment in supplying engines, machinery, vessels, tools, and stores of all kinds for the use of the army, the navy, and the mercantile service. Allusion was also made to the novel expedient of sending out a corps of "navvies" and other artizans to lay, as it was expressed, "the first section of the railway from Sebastopol to St. Petersburg." The production of the Lancaster rifled cannon, and of the wrought iron ordnance, by engineers, and the investigation, for the Government, by a member of the Institution, into the manufacture, boring, and firing of rifles, were noticed.

The few large works of civil engineering now in progress in Great Britain were then mentioned, and the onslaught of the Home Secretary upon the smoke and other nuisances of the metropolis was noticed, with the view of directing to these points, as also to the general sanitary questions and to the sewerage of the metropolis, the attention of civil engineers, whose advice would be found trustworthy, and who would discriminate between sound systems and the nostrums and baseless schemes which were now ignorantly thrust forward.

The extension of the feeding mains of the principal water companies to points high up the river, beyond the influence of the tidal range, and, in two cases, the removal of the entire establishments, was noticed; and it was maintained, that it was now only necessary to afford such an ample supply of water, at a sufficient elevation, on the north side of the metropolis, as would enable the sewers to be constantly flushed, and that their contents should be delivered at positions so low down the Thames, as to preclude the necessity for the mechanical lifting of the sewage, excepting for a limited area, and for those portions under high water-mark: and thus the metropolitan river might be rendered as pure as was practicable for a stream flowing amidst habitations and necessarily subject to some degree of pollution.

A slight sketch was given of the progress of railways on the Continent, in the colonies, and in America. The successful opening and subsequent progress of the Crystal Palace at Sydenham, was noticed; and assistance was asked for the approaching "Exposition" at Paris, in 1855. The council had given their best aid to the Government in the matter, and it was specially impressed on members to send only such models and specimens of works and machinery as should sustain the high character of the British engineers and manufacturers.

The following gentlemen were elected to fill the several offices in the council for next year:—

James Simpson, president; G. P. Bidder, I. K. Brunel, J. Locke, M.P., R. Stephenson, M.P. vice-presidents; J. Cubitt, J. E. Errington, J. Fowler, C. H. Gregory, J. Hawkshaw, T. Hawksley, J. R. McClean, C. May, J. Penn, and J. S. Russell, members; and H. Hensman, and Sir J. Paxton, M.P. associates.

PROVINCIAL NEWS.

Norwich.—A new chapel has been erected in the Surrey-road, at a cost of 2,500*l*. It is a plain but spacious building. There is no gallery, and the seats are all open benches.

Bury St. Edmund's.—A painted memorial window, by Clutterbuck, has been placed on the south side of the communion-table in St. Mary's Church here. The subjects of the six principal compartments are,—in the lower tier—"They brought young children to Jesus;" "Whosoever shall do the will of my Father which is in heaven, the same is my brother, and sister, and mother;" and "Gather up the fragments, that nothing be lost;"—in the upper tier—"Mary at the feet of Jesus;" "Jesus and Martha" ("I am the resurrection and the life"); and "The Raising of Lazarus." The tracery contains the four Evangelists and four major Prophets. At the foot is the inscription.

Diss.—Mr. L. Taylor, of Starston and Diss, some time since determined to erect a building in this town, which should be ornamental, and also capable of being devoted to various public uses, investing it in the hands of trustees, for the benefit of the inhabitants. The erection is nearly complete, but not quite fit for holding the corn market, to which its principal hall is to be devoted. It stands near the centre of St. Nicholas-street. The entrance is by a stone portico, in the Grecian Ionic style of architecture, the columns being after the model of the Temple on the Ilissus—the entablature after that of Minerva Polias, at Priene. The front doors are decorated: they open to an entrance-hall lighted by a lantern, and having three doors entering into the hall, which is 77 feet long, 42 feet wide, and 27 feet high. The floor is of small blocks of oak and sabica woods, laid in diaper pattern. The roof is of "Hartley's" patent glass, in lanterns running along iron girders, weighing about three tons each. The girders are 42 feet between their bearings: they are laid on sheets of gutta-percha, which, acting as non-conductors of sound, are said to prevent the noise often observed when a note is struck in unison with the girder. The ceiling is of ground glass, divided into compartments, the light being thus equally distributed, without glare or inequality arising from side-lights. The walls are strengthened with pilasters of Parian cement, intended to be polished. A cornice surmounts the whole, the lower member of which is perforated for the admission of fresh air, the heated air escaping from the lanterns and beneath the ceilings, the whole ventilation being regulated as desired. The decorations to the doors are of "Ransome's patent stone." The hall is heated by two stoves, with descending flues; and, for evening purposes, is lighted by gas-lights on brackets. Connected with the hall are two rooms, each 33 feet by 20 feet, which may be approached by a separate entrance. One of these Mr. Taylor intends granting to the town as a reading-room and library, if the hall is used as a market. The design is by Mr. Geo. Atkins, jun. of Diss. The carpenter's work was executed by Messrs. George Atkins and Son; the stonework, by Mr. Farrow; the bricklaying, by Mr. J. Rout; and the plumbing, glazing, and gas-fitting, by Mr. J. Aldrich. Messrs. Ransome, of Ipswich, supplied the iron girders of the roof; and the wood blocks of the flooring were cut at their steam-mills.

Rye.—The new cemetery chapels, which are now finished, are very much alike: that for the Established Church is something larger than its fellow, and has a low steeple and bell. The style is Early English. They were built by Messrs. J. Judge and Son, of this town, builders. The architect was Mr. Charles Smith. Shrubs are now being planted round the borders of the ground.

Southampton.—The new graving-dock at this port was opened for general business on Monday week. The water in the dock was pumped out in less than three hours: at the commencement there was a depth of 25 feet 4 inches. The dock is 400 feet long by 88 feet wide, and is capable of taking in the largest ships ever yet built. It has been built at a cost of 65,000*l*. under the superintendence of Mr. Alfred Giles, the engineer of the Southampton Dock Company. The pumping-engines, of 112-horse power, were constructed by Messrs. Maudslay, Sons, and Field. At the opening, Mr. Giles, the engineer, according to the *Hampshire Advertiser*, gave a dinner to the foremen and principal persons engaged in the work.

Prees.—On 2nd inst. the foundations of a new church at Faul's-green, for an outlying district of the parish of Prees, Shropshire, were begun to be dug by the eldest son of Viscount Hill, on the day of his attaining his majority. The church is to be built by subscription, Lord Hill giving the site and the bricks, and building the parsonage-house.

Torquay.—The Torquay branch of "The Metropolitan Association for Improving the Dwellings of the Industrious Classes," has just commenced operation, and the contractor for the first building—a dwelling for single men—is hard at work clearing the site. Accommodation will be provided for fifty-two unmarried men, each of whom will have a separate sleeping compartment, 8 feet by 4 feet 6 in. with the use in common of a general sitting-room, kitchen, lavatories, offices, &c.: apartments for a curator, to superintend the establishment, are provided, with the last-mentioned rooms on the ground-floor, the upper stories being devoted wholly to the dormitories and lavatories. The style of the building is Italian, executed with the native limestone, hammer-dressed, pointed with blue lias. Red brick is largely used as a decoration in the quoins and door and window dressings. The roof is covered with red Italian ribbed tiles, and is surmounted with a lantern and lief ornaments. The architect is Mr. Edward Appleton, of Torquay. The same artist is endeavouring to vary the style of the villa residences of the neighbourhood by substituting the natural face of the stone of which they are constructed for the usual stucco covering, and using red tile instead of the wonted slate. A villa built in this manner, in which a campanile, detached on three sides, forms a main feature, is now fast drawing to completion in a prominent situation a short distance from the town.

Wolverhampton.—It is intended to fit the Lion Hotel premises, recently purchased in North-street, so as to afford accommodation for the corporation and their officers, and also for the borough magistrates. Mr. Henry, the new town surveyor, has prepared plans according to which a council chamber, 43 feet by 24 feet, is to be constructed on the first-floor, and on the same floor there are to be offices for the town clerk, committee rooms, and a fire-proof chamber for the corporation records. It is contemplated, at a future time, to erect police barracks in the yard at the rear of the building. The cost of the immediate alterations will not exceed from 400*l*. to 500*l*.

SIGHTS AND SCENERY.

Theatre Royal, Haymarket.—The scenery in the opening story of Mr. Buckstone's pantomime, "Little Bo-peep," is particularly good, and will sustain the reputation of Mr. William Callcott. We would especially mention the Grove of Golden Laburnums, with a festival of shepherdesses, the whole as elegant and artistical as any could desire. In the last scene of the introduction, the Fairy Conservatory in Arcadian Regions, suspending machinery is used to carry fairies up the curved trunks of trees, and a very glittering piece of colour is the result. In the harlequinade there is a view of the Greek Court, in the Crystal Palace, very creditably painted by Mr. O'Connor. The pantomime altogether is very good, and well entitled to a large share of public favour.

Royal Olympic Theatre.—Mr. Wigan has produced a fairy extravaganza by Mr. Planché, called "The Yellow Dwarf and the King of the Gold Mines." For some years past it has happened that this author's extravaganzas have been set forth with scenery of such great beauty, as to enable those who were tired of praising the dramatist through a lengthened series of unvarying "hits," to attribute the success rather to the painter than the writer. On the present occasion, he has little to thank the painter for: to speak the truth, some of the scenes are positively discreditable to the management, and yet the piece is a great triumph, and all the town will have to go and see it. "Ay," some of the good-natured friends will say, "but then he has a great actor in Mr. Robson!" True, he has a great actor, and he has written for him a great part, fitting him to a nicety, and thus achieved, on the first night, one of the most complete and legitimate successes that we have ever seen. Miss St. George and Miss Ormonde contributed to the result by giving with point and vigour the witty things put into their mouths, and deserve their share of the praises.

Burford's Panorama.—As usual, Mr. Burford, in conjunction with Mr. Selous, has added his contribution to the amusements of the season. It takes the shape of a spirited and exciting representation of the Battle of the Alma, where our gallant soldiers first showed to a breathless world that the old spirit of England still animated her sons. The view is taken from the sloping ground, directly in front of the principal Russian redoubt, at the moment when the guards are driving all before them; but of course a number of incidents which followed each other are here represented as occurring simultaneously. Captain Turner's battery is being brought into action: Sir Colin Campbell is cheering on the historical 42nd: Sir George Brown, brave old fellow, is on the ground, and is about to shout "Sirs, I'm all right:" Lieut. Lindsay and Lieut. Thistlethwaite are waving the rags of their colours over the redoubt; and Lord Raglan and Sir John Burgoyne are giving the necessary orders. Many of the heroes shown in the view are now no more, but their names will live for ever in story.

The Globe, Leicester-square.—Mr. Wyld, always ready to meet the times, has added to the very important geographical collection in Leicester-square a large model of Sebastopol, by means of which, and the lecture periodically given, a knowledge of the position of the allies may be readily attained. It is to be wished that the model had stretched as far as Perekop: it would then have served to make more evident the great strategical error that has been committed by the allies in not occupying the entrance to the Crimea. Some of the lectures given in the Globe are very interesting.

We must postpone notices of the *Lyceum*, *Princess's*, *Polytechnic*, &c. until next week.

DISCUSSION ON THE WORKS OF LIVING ARCHITECTS.

The apparently eager desire to detect any little flaw or *lapsus linguæ* in Mr. Ruskin, whether in his words or writings, and even in matters which bear no direct or practical reference to the important subject of his present well-directed labours, suggests, I think, a suspicion that truth and the advancement of the science of architecture in this country are not their object. How is it, for example, that the architects and their friends allow their own private feelings so often to stand in the way of the advancement of their art? How is it possible to improve if we are not to refer to the works of existing architects as examples of what we are to avoid or follow? If Mr. Ruskin finds fault with such curious buildings as are rising up around us, such as the Army and Navy Club in St. James's-square, or the new edifice in Leicester-square; and if he has exposed what he considers the mistaken principles which have guided the architect of the new Houses of Parliament (in reference to the calculation of the distant effect of ornamentation, and many other respects), how ought he to be met by the architects of these buildings? Why, surely, by their honestly showing the correctness or admitting the errors of their principles, but not by vituperation. But I am persuaded of better things of Sir C. Barry, and I feel sure he would be the last man to countenance the preposterous idea that a building which has been paid for by the nation must not be criticized for fear of "hurting the feelings," as it is called, of the architect! I have been led to make these remarks from noting the spirit which apparently guides your correspondents, "M. A." and "Vindex." A wise man will surely be the first to hold out the right hand of fellowship to *any one* from whom he is likely to get a useful *hint* even; and as Sir Joshua Reynolds said I think of a good painter—he will listen even to the remarks of a child. No great artist will ever allow personal considerations to interfere with the object of his heart, the discovery of the *truth*; and he will ever be on the look out to suspect himself. For these reasons I am at a loss to understand what your correspondent, "Vindex," means, when he speaks about an "unprovoked and inconsiderate *attack* upon Sir C. Barry!" Is it not, sir, folly to confound politeness towards individuals with honesty towards the science

they profess? At this rate we can make no advancement at all. I am about to become a subscriber to the Architectural Museum in Parliament-street, and trust that no feeling unconnected with the direct advancement of science will be allowed admittance.

R. W.

Notices of Books.

VARIORUM.

The first number of a work on the Ecclesiastical Antiquities of Scotland, entitled, "The Kirk and the Manse," has just been issued by Messrs. Fullarton and Co. Its object, we understand, is to give pictorial illustrations of all the most interesting parish kirks in Scotland, many of which, although hidden in sequestered spots, beyond the route of the every-day tourist, are, nevertheless, characterised by architectural beauty and picturesque effect. The few cathedrals which Scotland possesses, are also to be embodied in the work: concise accounts of them will be given, and a general introduction to the whole subject will make us acquainted with the origin and progress of the present national church. The author is the Rev. Robert Fraser, M.A. minister of St. John's, Edinburgh; and the illustrations will be from original sketches, executed in tinted lithographs, from the studio of the Messrs. Macpherson, of that city. More precise drawings than those in the first are desirable for future parts.——"The Australian Keepsake for 1855,"* contains forty views of landscape scenery, illustrating Sydney and Port Jackson, New South Wales, and is interesting as giving a good notion of the condition to which that important country is arriving. The engravings are of various degrees of merit, but the majority of them are very creditable: for example, the view of Sydney from the Old Point Piper-road, the Gap South Head, North Head, from Vaucluse, and the Nobbies. Some descriptive letterpress would make the book more interesting to English buyers.——"Murray's Official Hand-book of Church and State," appears this year much enlarged, and on a plan altered so far that the more ephemeral matters, such as ever-changing lists of office-bearers in royal households, members of the House of Commons, authorities civil and military, ecclesiastical, judicial, &c. have been withdrawn from the present volume, and printed separately, as a sort of appendix, which may either, we presume, be bound up with the more permanently interesting matter of the Hand-book itself, or kept separate altogether. Certainly the incorporation of these lists had advantages in the way of reference, but there can be no doubt that the more permanent value of the Hand-book as an article of sale is thus enhanced. In the present revised and enlarged edition of the Hand-book, the information is of course brought down to the present date, and much of it is now collected for the first time, and from many sources, by its compiler, Mr. S. Redgrave.——In "Murray's Railway Reading," now before us, we have a reissue of "Notes from Life," by H. Taylor, and of the celebrated "Rejected Addresses" of the Smiths, James and Horace. An interesting acknowledgment is made in the advertisement to the twenty-second edition of this latter little volume on the part of Mr. Murray, namely, that the copyright, which had been originally offered to his deceased father for 20*l.* and refused without even looking at the MS. was purchased by that same gentleman in 1819, after others had reaped the profits of no less than sixteen editions, for 131*l.*! and the authors themselves intimate that they sold their interest in that, and the reissue of another little *brochure*, for 1,000*l.* after reaping half the profits on various editions, issued in quick succession by Mr. Miller, of Covent-garden, who had had the *nous* to appreciate that merit which many other publishers,—with less excuse than Mr. Murray, who did not give it even a chance of recognition or discovery,—were too obtuse themselves, or too much addicted to mere name-worship, to discover in authors then too obscure as writers to have yet had any *name* to worship. And the "Rejected Addresses" are not the only Sybilline leaves which acute publishers have "rejected," and, it may be, are now rejecting, and will yet reject, to the after troubling of their pecuniary consciences, and to their sore repentance. Even the most hasty glance through the "Rejected Addresses" cannot but excite surprise at their rejection by publishers. These "Addresses" literally teem with *negotiable* fun quite sparkling with auriferous and argentine lustre. Perhaps the best joke *in* the "Rejected Addresses" is one which, as a true Hibernian might say, *isn't in them* at all. We mean the doubtless intentional omission of burlesques on Campbell and Rogers, which deceived Lord Jeffrey, as an Edinburgh Reviewer, into the idea that these two were the very authors of the "Rejected Addresses," themselves, for he says, "We marvel why he [the fictitious or nominal author] has shut out Campbell and Rogers from his theatre of living poets, and confidently expect to have our curiosity in this] and in all other particulars very speedily gratified, when the applause of the country shall induce him to take off his mask." There is all the more probability that this exclusion of two eminent poets was intentional, inasmuch as it was not the first practical joke of a similar kind passed off by the two talented authors of the "Rejected Addresses," who on another occasion humbugged some one—Dr. Busby, if we mistake not—into the idea that they were the members for Old Sarum, and another "rotten borough" the name of which we do not at this moment remember.

* Published by Sands and Kenny, Melbourne and Sydney; and Sands and Son, London.

Miscellanea.

Alleged Blundering in the Civil Engineering and Architectural Department of the Admiralty.—The Admiralty civil engineers and architects are now coming in for their share of that criticism and abuse which would appear to fall to the lot of every department of Government in this country. "From the mud-machine in the Thames," it is said, "to the kicking caisson at Devonport—from the concrete docks at Woolwich to the lamentable failures at Keyham," everything is wrong, and nothing ever will be right, we dare say, till the critics be themselves installed in the offices which it seems to be thought so desirable to have vacated. Smart alliterations and antitheses have often more to do, unhappily, with public complaints than positive blunders. It is quite possible, for all that we personally know, that the caissons may be kicking and the concrete docks a lamentable failure only in the columns of our daily contemporaries. We are told however, in other quarters, that one of the most important objects of the new docks at Keyham—the power of taking in ships at least at high water of any tide—has failed (by a few inches), and that too at a time of great emergency; and that at Sheerness, where many improvements and alterations have taken place in her Majesty's yard, a boiler factory that was progressing favourably, was lately brought to a stand-still in consequence of the foundation giving way at both ends of the building. A portion of the brickwork, &c. was, it is said, pulled down to lighten it. There was to be a Government survey made of it. As the ends, however, had been so far finished, it was thought they would be allowed to remain a month or two longer, to see whether the foundation gives any more: if not, there will be no occasion to pull it down. The contractors, it is said, have done all according to contract.

Gas and Water at Birkenhead.—The manager of the Birkenhead Gas and Water Company, says a Liverpool paper, is charged by Mr. H. Gough with refusing to allow him a supply of water, though he wishes to pay for it, "the reason of my refusal," he says, "being no other than that I am about to show to the inhabitants of Birkenhead that gas can be supplied at 2s. per 1,000 cubic feet, and much better than our company supply to you at 5s. 10d. per 1,000 cubic feet. But, to effect this, I require a supply of water, and, under the present management, my object is to be churlishly, if not unjustly, defeated." He calls upon the inhabitants to overturn such a system of monopoly.

The Portsmouth Dockyard Foundry.—Great interest was excited lately in the twisting of a new crank shaft for the *Simoom*, 18, iron screw ship. The great principle and advantages of the Nasmyth hammer were, it is said, very apparent, and its *striking* powers were put forth to great purpose. The crank shaft weighed about eight tons, and it was necessary to twist it at right angles. In ten minutes the shape required was accomplished. Government are said to require at this foundry a Nasmyth's hammer double the size of the present one.

The Battle of the Locks.—In the Court of Queen's Bench on Thursday week, the case of Parnell and Puckridge *v.* Goater, was heard. The plaintiffs in this action were the locksmiths, in the Strand, and the defendant was foreman to Mr. Chubb, of St. Paul's Churchyard. The action was brought to recover damages for a trespass in taking the plaintiffs' lock from its place in their stand at the Crystal Palace, and making a key to it, and also for slander and a libel published by the defendant, alleging that he (defendant) had fairly picked the plaintiffs' lock, and that the plaintiffs had dishonestly refused to pay the defendant a reward of 200 guineas, according to their public promise. The defendant pleaded the general issue, and that he had taken the plaintiffs' lock, and made a key thereto with plaintiffs' leave and license. As to the counts for slander and libel, he pleaded in justification that he (defendant) had fairly picked plaintiffs' lock, and that they had dishonestly refused to pay him the 200 guineas. The jury found for plaintiffs on all the three issues, and gave 30*l.* damages.

War Appliances.—Government, it seems, have contracted for ten miles of portable railway, to be used between Balaklava and Sebastopol. We do not know what connection this may have with the patriotic contract of Messrs. Peto and Co. to form a railway there at cost price. The line alluded to is said to have been contracted for with Mr. Crosskill, of Beverley, twenty or thirty of whose men are to assist in laying it down. No fewer than 2,000 navvies, it is said, are being forwarded by detachments of 150, *viâ* Austria, by Messrs. Peto and Co. The men are to have 5*s.* a day, with board, lodging, and clothing. A number of carpenters have been hired by Government to assist in erecting the wooden huts sent out and being sent. They are to receive 2*l.* 6*s.* a week, with rations. It has been proposed to render these huts fire-proof, by means of some secret composition, to be absorbed by the planking. Would not saturation with a hot silicate of lime, or of potash, effect this important and desirable object? A correspondent of our own, Mr. W. J. Tait, suggests the dispatch of some millions of small canvas sand-bags, with which, when filled with a few pounds weight of sand or earth, various useful purposes might be served in our camp before Sebastopol, such as shielding these huts themselves, or protecting the ground line of tents from wind, by being built up round them. It has been questioned whether such huts as those sent will be a sufficient protection from the cold on the heights, in which case these sand-bags might be useful, especially on their northern sides. A Lincoln founder undertook to supply the portable steam-engine required in the formation of the railway, in ten days. It has been proposed to make use of balloons as aeriel outlooks, whereby the positions of the enemy might be discovered, and advantage taken of the intelligence thus obtained. Another kindred idea is the employment of the electric light by night, to show where the enemy are at work, while the allies are in darkness. We often hear of war medals, worn on the breast, by chance protecting the life of the wearer from some deadly shot. General Canrobert is said to have been so protected by a medal presented to him by the Empress Eugenie. If such be the fact, why should not a whole breast-plate of such medals, or of some substitute for them, be worn by every British soldier? Why, indeed, is not every vital organ protected against musket and rifle balls in some such way as this? It once was so, although to a cumbrous extent, but a mere *facing*, as it were, of scale armour, would protect the valuable lives of our limited troops, and by help of good revolvers, rifles, and other appliances, offensive and defensive, an immense accession, virtually, might be made to the British army, which would more than make up for the want of great numbers.

Machine for Raising Water, and for Drainage.—A machine, which seems to be merely a centrifugal pump in principle, though it may be with some modification of its ordinary form in this country, is said to have been invented by a M. Piatti, and to be now in course of trial at Port St. Nicholas, in France. The water is raised by the centrifugal steam pump through a cone-shaped vessel, open at top.

Wrought-iron Ordnance.—In the *Builder* recently, it was said, "We hope to see Mr. Nasmyth's steam hammer forthwith hard at work on wrought-iron ordnance, so as to double or triple our field artillery power by comparison with its present cumbrous weight of cast-iron." Now, with reference to the above, it is humbly submitted that the force of a charge of powder in projecting a ball must always be considered as minus the force wasted in the recoil of the gun, and, consequently, if the dead weight of metal in the piece be reduced, the quantity of powder must be increased, in order to project the ball the same distance: nor is this all, for in a light recoiling piece, the line of collimation would be thrown aside, and the precision of the aim defeated. H. B. S.

The Telegraphic System of the United States and Canada.—In the States, says Mr. William Chambers, three kinds of telegraphs are employed—those of Morse, House, and Bain; the difference between them being mainly the method of indication. Unitedly, the various telegraphic systems pervade the entire region between the Atlantic and Mississippi, and from Nova Scotia and Canada to New Orleans. The number of miles of telegraph in the States is now about 20,000, and in Canada, and other British possessions, from 2,000 to 3,000. The wires are carried along the sides of the railways, across fields and rivers, through forests, and in cities they may be seen crossing the streets and the tops of the houses. From New York, two lines proceed south to New Orleans; one by way of Philadelphia, Baltimore, Washington, and Charleston, making a length of 1,966 miles; the other runs from Cleveland, on Lake Ontario, by Cincinnati and Nashville, being a length of 1,200 miles. So small a price is charged, that there is a large amount of miscellaneous correspondence, besides market and stock intelligence. A message of ten words, for example, may be sent from Washington to St. Louis—a distance of 989 miles—for 1 dollar 20 cents. Under 200 miles, the charge is about a cent. per word. On some lines as many as 700 messages are sent in one day. So rapid is the transit, that the news brought to New York by a European steamer, at eight o'clock a.m. has been telegraphed, by way of Cincinnati, to New Orleans, and the effects there produced on the market returned to New York by eleven o'clock—being a circuit of nearly 4,000 miles in three hours.

The Railway System of the United States.—The railways, now an extraordinary feature of the United States, are rapidly developing the latent resources of the country. Mr. William Chambers gives an account of them, from which we extract the following particulars:—In October, 1853, the length of railways in actual operation in the States was 14,494 miles, nearly one-half in the New England States and that of New York. They are seen there radiating in several directions from every city, interlining and crossing and sending out branches. In Massachusetts alone, in the early part of 1853, there were about 1,200 miles of railway—a large number for a State with one-third of the population of Scotland. At the same period, New York had 2,123 miles; Pennsylvania, 1,244 miles; and Ohio, a recently-settled State, 1,385 miles. Large extensions have now been made in all; and the entire railway system of the United States at the present moment may be said to comprehend nearly 18,000 miles, with several thousand miles in course of construction. It is anticipated that, previous to 1860, there will be completed at least 35,000 miles. Already gigantic efforts have been made to unite the chief cities on the Atlantic with the Valley of the Mississippi and the vast regions westward and northward. Joined to the lines now constructed, and forming in Canada, the north will be thoroughly laid open for settlement; and connected with a line proceeding southwards from Illinois, traffic will be opened upon the one hand with Mobile and New Orleans, and on the other, with the regions bordering on Lakes Huron and Superior. The next steps are to reach Oregon and California, and are now engaging earnest consideration. The most urgently called-for of these lines is that to California, by a pass through the Rocky Mountains; and when this is effected, it will be possible to reach San Francisco in four days from New York, and by the additional means of steam-vessels, to go round the world in three months. Traversing from the borders of the Mississippi to San Francisco, a country 1,600 miles in breadth, the line cannot be undertaken without liberal aid from the Government.

Fall of part of the Weymouth and Portland New General Market-house.—A fall of some portion of these works took place on Saturday week. A local paper states that "this casualty has resulted from sources over which the utmost foresight and the most skilful appliance of constructive science could have exercised no control." That part of the work which has given way is a section of the brick arches which form the vaulting of the cellarage to the market-house. This work is strengthened at the intersection of each arch by a longitudinal cast-iron girder, of some 10 or 12 inches in thickness, and one of these girders, it is said, was made of iron which had not been skimmed before casting, and hence, being unable to support the superincumbent brickwork, yielded to the pressure, snapped, and the fall of the adjacent arches was the result. The same paper speaks of "malpractices which were imputed to Mr. Goodyear, and which he satisfactorily refuted on Monday week" before the local council. The brick piers were supposed to be constructed on a wrong principle. The clerk of works, Mr. Malpus, it is added, showed that the specifications are being carried out to the letter, and that the charges brought against the builder were unfounded.

Hartlepool.—The plans deposited under the title of "Hartlepool Great Float and Railway," propose to occupy 80 acres on the margin of the slake; to extend the old tidal harbour considerably inland, and over the site of the present sluices; to deepen the whole harbour by dredging, and extend the jetty pier out to the line of the whole pier on the Hartlepool side. The float is to be excavated to 12 feet below low-water. The engineers of this scheme are Mr. James Abernethy, C.E. London; and Mr. Thomas Meik, C.E. Sunderland. Mr. Meik last year published a plan, under the title of the "Hartlepool Bay Harbour of Refuge," which embraced the above scheme, together with the enclosure of the bay by two great piers running out into deep water on one side from the Heugh, and on the other over the Long Scar Rocks. Plans for such piers, slightly modified, have also, it seems, been deposited by the commissioners of the pier and port, prepared by their engineer, Mr. Rendell, C.E.

Contracts and Stamps.—A correspondent mentions that in the Court of Exchequer recently, an action was brought by a builder to recover the sum of 12*l.* 6s. 8d. due for extra work not comprised in the contract. No stamp was affixed to the document, and Mr. Pollock, the associate, called the attention of the judge to that fact. The verdict was given in favour of the plaintiff, who had to pay 2s. 6d. for the stamp, and 10*l.* for penalties, out of 12*l.* 6s. 8d. the amount awarded him by the jury.

Purification and Regulation of Gas.—Mr. J. Chisholm, of Holloway, has recently patented a combustion of the red ochery substances found mixed with peat and its subsoil, with hydrate of lime, or the mixed hydrates of lime and magnesia, obtained from magnesian limestone, and employing it in the dry gas purifier. This patent is pretty clearly indebted for its suggestion to the recent Wakefield patent, under which clay and lime are combined for the same purpose. Such bastard patents are but too common. No sooner does some man of ingenuity strike out anything new or hopeful, and manages to secure it by patent, than forth comes some other "invention" exceedingly like it, and slavishly based upon it, with just enough of difference, and just avoiding the particular nature of the meritorious invention so far, as to enable the plagiarist to seize an exclusive advantage to himself, by *riding* the original patent for his own behoof. No such secondary or imitative patent ought to be allowed.——A patent has recently been obtained by Mr. David Hulet, of High Holborn, for an apparatus for regulating the supply of gas to the burners, consisting of a cast-iron vessel, with inlet and outlet passages for the admission and emission of the gas. The inlet passage is covered by a valve—the edge of which dips into a groove containing mercury. The valve is attached by a rod to a short cylinder—the lower part of which is open, and also dips into mercury. This cylinder covers and surrounds the inlet, and, as the gas flows through it, exerts an upward pressure, which adjusts the supply. ——Messrs. W. and J. Clibran, of Manchester, have also patented an apparatus for a similar purpose, in which the regulation is effected by a slide, or disc valve, and a small gasometer.

Vivification of Gaslight.—A good few years since, it was suggested in the *Builder*, that a coil of platinum wire in the flame of a gas-light might promote the perfect combustion of the gas, and increase the vividity of the flame. A French patent was taken out for an apparatus of this kind, but we have heard no more about it of late, till now that we learn that the invention was recently exhibited before the Liverpool Polytechnic Society, by a Mr. Jackson, who, it is said, showed that by merely inserting a slightly-twisted platinum wire over the orifice of the burner, and within the gas-flame, its illuminative power was largely increased. Experiments, it is added, have since been made at the Liverpool Gas-works, when it was found that a saving of 17 to 20 per cent. was effected by the "new apparatus." Platinum, while so infusible as to submit to white heat without melting, is also in such circumstances incorrodible by oxygen, and hence it does not burn away as iron or even copper would, while yet it accumulates an intense heat, which excites any hydrocarbonaceous gas that might otherwise escape unburnt, to perfect or total combustion. Doubtless, even platinum will waste in time by volatilization alone, although of a very fixed nature; but it is probable that any cost arising from its waste will be as almost nothing compared with the economy or the brilliancy of light thus produced. Copper wire, however, might be tried, and but for its waste, we do believe would serve much the same end: it could be cheaply replaced. Should either platinum or copper be really found useful to the end suggested, burners could easily be made with a small hole drilled into them for the insertion of the bit of twisted wire required; or one end of the wire, perhaps, could even be merely twisted round the neck of the burner.

The Canadian Timber Trade.—The *Liverpool Times* alludes to the important influence of the Grand Trunk Railway of Canada upon the Canadian timber trade. In Brompton, Canada East, south of the St. Lawrence, on the St. Francis river, six miles beyond Sherbrooke, a block of lumbering mills has been recently completed by C. S. Clark and Co. of Portland. The mills are of gigantic dimensions, and are built in the best manner throughout. The block is 334 feet in length. At a low estimate these mills, it is said, will saw, in a season, working day and night, 20,000,000 feet of long lumber, and two trains a-day will be required to get this lumber to Portland, whence it will be shipped to all parts of the world. Thus, with unfailing water power, in the midst of the exhaustless forests of Canada, with such mills within easy and desirable access to the principal seaport of Maine, who, it is asked, can measure the success of this enterprise?

A Brick.—The *Athenæum* says, "Architects will be glad to hear that a new process has been invented at Birmingham, which makes brick nearly as hard as stone. One of the new bricks sustains a weight of 2,625 lbs.: a common hand-made brick breaks at 645lbs." There must be some mistake in the figures. A very poor brick will carry more than the heaviest weight here named. We have seen a brick withstand a pressure of 50 tons (112,000 lbs.) without a squeak.

Hinds' Houses in Scotland.—Lately some stir has been made on the subject of improving the dwellings of farm-servants in Scotland. Mr. William Chambers, the journalist, who a few years since purchased the estate of Glenormiston, in his native county of Peebles, has had built four cottages for the servants of a farm-tenant on this estate, of which an account appears in the *Edinburgh Courant*, whence we extract the following details:—Each cottage comprises a kitchen or common sitting-room, and garret over it with two fixed bedsteads. The row of four dwellings is built of ordinary rubble, stone, and lime, and slated. The walls are rough-cast. The lintels door-steps, chimney-tops, &c. are of red sandstone. The roof has zinc roans and iron tubes to draw off water into gratings beneath communicating with tile-drains; and round the outside of the walls the ground is causewayed with small stones from the Tweed in a slope towards gutters, with gratings for slops opening into built drains 9 inches square, at the upper end of which a rill of water gushes from a pipe in an adjoining bank, and supplies the cottages as well as washes the drain. Each cottage has one sash-window in front, besides a pane of glass in the door to light a small passage into the kitchen, which is protected by an inner door, outside which is a closet for coal, pots, &c. The kitchen is floored with square yellow tiles, and plastered on walls and ceiling. It contains two bed-spaces and a store-closet shelved, lighted, and ventilated. The fireplace contains a fixed grate, and the garret is supposed to be heated by the fire of the kitchen, which is the only fire the inmates usually can afford. The length of the whole row, outside measurement, is 94 feet 6 in.; breadth, 20 feet 3 in.; size of each kitchen, within, 16 feet, by 12 feet 3 in.; height of kitchen, 8 feet; size of closet off kitchen, 8 feet 6 in. by 8 feet; size of garret-room, 12 feet square, including beds; height of wall outside, from ground to edge of slates, 10 feet 6 in. The estimated cost of the whole, exclusive of some special expenses incurred in levelling, &c. was about 300*l.* or 75*l.* each cottage. Mr. Chambers acted as his own architect. Lord Traquair, Mr. Tennant, of Glen, in Peebleshire, and other proprietors, are also improving their farm-cottages.

TENDERS

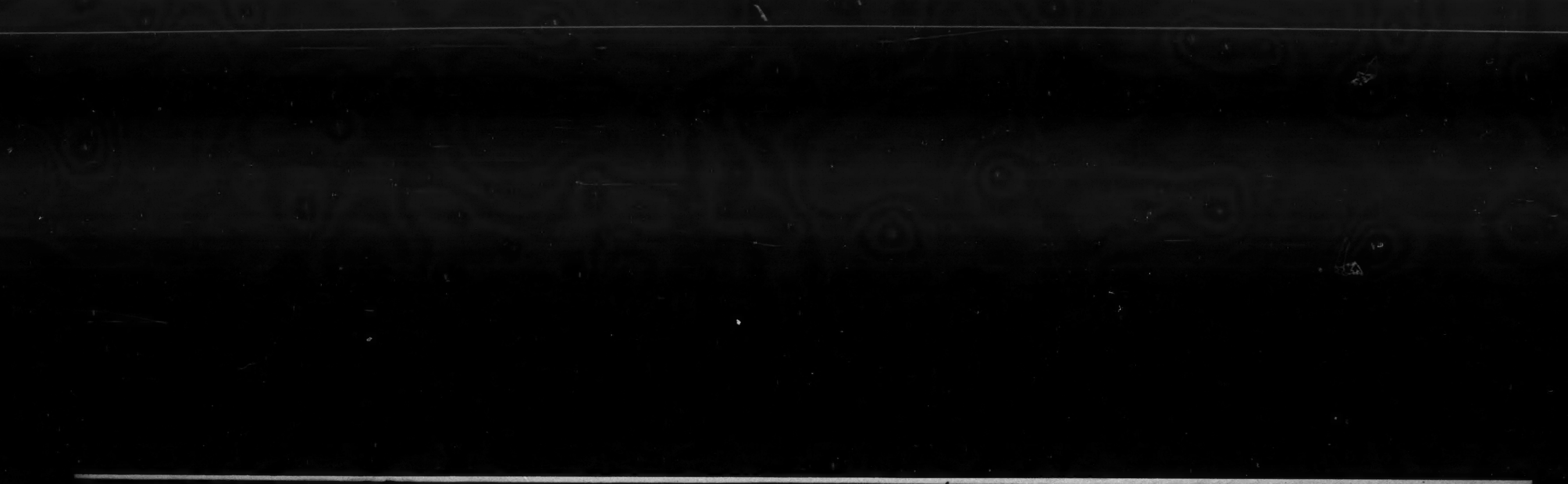
For an engine-shed and gas-house at Three Bridges station, for the London, Brighton, and South-Coast Railway Company:—

John Jay	£1,498 0 0
Joseph Davey (Lewes)	1,317 17 0
John Fabian (Brighton)	1,197 0 0
Little and Son	1,176 0 0
R. Bushby (Littlehampton)	1,137 0 0
George Furness	1,135 0 0

For a house at Eltham, advertised for in this journal of the 9th instant:—

Wiltshire	£1,294 0 0
Tarrant (New Kent-road)	1,190 0 0
Paul (Dover-road)	1,174 0 0
Treum and Son	1,087 0 0
Bland (Blackheath)	1,079 0 0
Davis (Deptford)	978 0 0
Rolfe (Dulwich)	972 0 0
Case (Bethnal-green)	917 0 0
Richards (Strand)	905 0 0

TO CORRESPONDENTS.

Proposed Competition at Lille.—In reply to numerous inquirers, the particulars, we are informed, will be found at Mr. Dolman's, New Bond-street, London, in the course of a few days.

"A. B. H." "F. O. W." "C. G." "R. J. J." "S. H." "L and P." "P. T." "J. L. P." "J. J." "R. J. H." "W. P." "A. S." "W. C. S." "E. C. R." "J. P." "Architectural Exhibition." "One who would have subscribed." "P. W." "J. J." "W. S." "W. S. H." "I. B. jun."